BUTIN, Il.

Awakened steppe. Grazhd. av. 20 no.9:8-11 S '63. (MIRA 16:8)

(Virgin Territory--Aeronautics, Commercial)

KARPENKO, I.; BUTIN, I.

A pledge is not a witty remark. Grazhd. av. 20 no.6:12-13 Je '63. (MIRA 16:8)
(Trade unions)

BUTIN, I. I.

SARIBAN, B.M., inzhener; BUTIN, I.I.

Improve the operation of non self-propelled vessels. Rech.transp. 16 no.7:20 Jl '57. (MLRA 10:9)

1. Nachal'nik sudovoy sluzhby Severo-Zapadnogo parokhodstva (for Sariban). 2. Nachal'nik sluzhby nesamokhodnogo flota (for Butin). (Towing) (Barges)

BELETSKAYA, I.P.; BUTIN, K.P.; REUTOV, O.A.

Reaction of some organomercury compounds with diazonium salts. Izv. AN SSSR.Ser.khim. no.9:1711-1712 S '64. (MIRA 17:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.

BUTIN, I.I.

Winged assistants to farmers. Zashch. rast. ot vred. i bol. 8 no. 11:15-16 N '63. (MIRA 17:3)

BUTIN, R.V.

Fossil Cyanophyceae in proterozoic carbonate sediments of southern Karelia. Izv.Kar. i Kol'.fil. AN SSSR no.2:47-51 '59. (MIRA 12:11)

1. Otdel regional'noy geologii Karel'skogo filiala AN SSSR.
(Karelia--Algae, Fossil)

SLODKEVICH, V.S.; SOKOLOV, V.A.; BUTIN, R.V.

Proterozoic algal bioherms or Southern Oleniy Island in Karelia.
Dokl.AN SSSR 134 no.2:435-438 S '60. (MIRA 13:9)

1. Karel'skiy filial Akademii nauk SSSR. Predstavleno akad.
D.V. Nalivkinym.
(Oleniy Island (Lake Onega)--Algae, Fossil)

SOKOLOV, Vladimir Alekseyevich; BUTIN, Remir Vasil'yevich; BORISOV, P.A., nauchnyy red.; SHEKHTER, D.I., red.; SHEVCHENKO, L.V., tekhn. red.

[Geological field trip to Yuzhnyy Oleniy Island and Volkostrov] Geologicheskaia ekskursiia na Iuzhnyi Olenii ostrov i Volkostrov. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1961. 57 p. (MIRA 14:8)

(Karelia--Geology--Field work)

BUTIN, R.V.

Proterozoic organic remains of southern Karelia. Trudy Kar. fil. AN SSSR no.26:152-157 '61. (MIRA 14:7)
(Karelia--Organic matter)

SOKOLOV, V.A.; BUTIN, R.V.

New algal horizon in the Yatuliyskaya terrigenous carbonate stratum in the region of Lake Onega, Karelia. Dokl. AN SSSR 140 no.1: 204-206 S-O '61. (MIRA 14:9)

1. Karel'skiy filial AN SSSR. Predstavleno akademikom A.A. Polkanovym.

(Onega Lake region--Stromatolites)

SOV/25-58-11-42/44

AUTHOR: Butin, V., Chief Scientific Co-Worker

TITLE: Products from Milk (Produkty iz moloka)

PERIODICAL: Nauka i zhizn', 1958, Nr 11, pp 78-79 (USSR)

ABSTRACT: The author evaluates the importance of milk products as foodstuffs, as well as technical products, mentioning the scientists I.P. Pavlov and I.I. Mechnikov.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut molochnoy promyshlennosti (All-Union Scientific Research Institute of the Milk Industry)

Card 1/1

Butin, V.I.

BUTIN, V.I., inzhener; MUKAL'KOV, S.S., inzhener.

New design of an induction oil heater. Elek.sta. 24 no.10:57 O '53.
(MLRA 6:10)
(Induction heating)

DEGTYAREV, F.G.; BUTIN, V.I.; BOGDANOVA, Ye.A.; BOGDANOVA, G.I.; SHERSHNEVA, V.I.; MILYUTINA, L.L.; DEMUROV, M.G., kand. sel'khoz. nauk, spets. red.

[Recent developments in the technology of milk products; textbook] Novoe v tekhnologii molochnykh produktov; uchebnoe posobie. Moskva, Vses. zaochnyi tekhnikum miasnoi i molochnoi promyshl., 1964. 187 p. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut molochnoy promyshlennosti.

BUTINA, I.

At the Exhibition of the achievements of National Economy of the U.S.S.R. in 1962. Grazhd. av. 19 no.11:16-17 N '62. (MIRA 16:1)

(Moscow--Exhibitions) (Airplanes)

BUTINA, I.V.; PLYUSNIN, V.G.; SHEVCHENKO, N.A.

Analysis of phthalic acids by water extraction. Izv. Sib. otd. AN. SSSR no.6:68-77 '62 (MIRA 17:7)

1. Ural'skiy filial AN SSSR, Sverdlovsk.

S/595/60/000/000/003/014
E075/E435

AUTHORS: Butina, I.V., Plyusnin, V.G.

TITLE: Oxidation of dialkyl derivatives of benzene to phthalic acids and their separation

SOURCE: Vsesoyuznoye soveshchaniye po khimicheskoy pererabotke neftyanykh uglevodorodov v poluprodukty dlya sinteza volokon i plasticheskikh mass. Baku, 1957. Baku, Izd-vo AN Azerb. SSR, 1960. 131-171

TEXT: The aim of the work was to investigate the process of oxidation of diisopropylbenzenes with nitric acid and separation of the resulting phthalic acids. In particular, it was desired to find the optimum conditions of the oxidation process in relation to temperature, time of reaction, concentration of HNO_3, and additions of NH_4VO_3 as catalyst. The oxidations were carried out 1) under normal pressures and 2) under pressures of 40 to 50 atm. It was found that the best conditions for the first method are as follows: excess HNO_3 (theoretical): 40 to 45% time of oxidation: 12 to 15 hours; concentration of HNO_3: 32 to 42% (d = 1.2 to 1.26). It was noticed that small additions of

Card 1/4

Oxidation of dialkyl ...

NH_4VO_3 to nitric acid decrease the reaction time from 18 - 20 h to 10 - 12 h, and increase the yield of phthalic acids from 60 - 62% to 79 - 82%. The nitric acid can be used repeatedly up to 5 to 6 times, its concentration being brought up to the required level after each oxidation cycle. The presence of secondary products of reaction, such as nitro-compounds, slows down the oxidation process. The accumulation of the reaction byproducts in nitric acid does not permit to use it for more than six oxidation cycles. The best conditions for the oxidations under pressure are as follows: temperature: 140 to 145°C; excess HNO_3 (theoretical) 40 to 45%; time of reaction: 3.5 to 4 hours, final reaction pressure: 45 to 50 atm; concentration HNO_3: 32 to 37%. Comparative oxidation of different dialkyl derivatives of benzene with HNO_3 was carried out under the optimum conditions established for the oxidation of diisopropylbenzenes both under normal and elevated pressures (40 to 50 atm). Catalyst (NH_4VO_3) was used in a quantity of 0.002 mols for every mols of oxidized hydrocarbon. The best yields of phthalic acids (77 to 83%) were obtained from p-cymene, diisopropylbenzene, diethylbenzene and isopropylsec-butylbenzene. Xylenes give lower yields - about 35%.

Card 2/4

p-xylene 57%). Substituted benzenes containing tertiary alkyl groups are not easy to oxidize and give poor yields. In order to separate the phthalic acids, the differing solubilties of their ammonium, calcium and barium salts were utilized (Ref.1: Dobryanskiy A.F. and Obolentsev, R. DZhOKh, 8, 1938, 1810). The acids were dissolved in 6% ammonia solution. Terephthalic acid forms the least soluble salt. When the three isomeric acids (ratio 1:1:1) were dissolved in the ammonia solution, 80% of the terephthalic acid present in the mixture precipitated out. The precipitate is contaminated with isophthalic acid if excess NH_3 is used. However, the latter acid can be separated via its calcium or barium salt. The best separation of isophthalic acid can be effected by adding 150% excess calcium chloride to the dissolved ammonium salt, with the amount of water in the solution being not less than 75 g per 1 g of isophthalic acid. The separation of terephthalic and phthalic acid by this method was not satisfactory, both acids coming out of solution as their calcium salts. Losses of the acids during the separation are mainly those of phthalic acid which is the most soluble of the three acids. The results can be briefly summarized as follows:

Oxidation of dialkyl ...

1) It was shown that HNO_3 oxidation of alkyl benzenes and, in particular, diisopropylbenzenes gives an overall yield of 75 to 82% of isomeric phthalic acids.
2) Terephthalic acid can be isolated from the mixture of the isomeric acids in good yield via its ammonium salt.
A.F.Dobrinskiy and R.D.Obolentseva are mentioned for their contributions in this field. There are 4 figures, 3 tables and 14 references: 5 Soviet-bloc and 9 non-Soviet-bloc. The four most recent references to English language publications read as follows: Ref.9: Egan C.I., Luthy R.V. Industr. Engng. Chem. v.47, no.2, 1955, 250; Ref.10: Haines H.W., Powers I.M., Benett F. Industr. Engng. Chem., 47, no.6, 1955, 1096;
Ref.11: Mayor J. Ind. Chem., v.42, no.461, 1955, 387-390.
Ref.12: Paint. Oil Chem. Rev., 118, no.3, 10,12,14-17, 1955.

Card 4/4

S/768/60/000/004/003/004
I060/I242

AUTHORS: Butina, I.V. and Plyusnin, V.G.

TITLE: Oxidation of dialkyl derivatives of benzene to phthalic acids and their separation

SOURCE: Akademiya nauk SSSR. Ural'skiy filial. Institut khimii. Trudy. no.4. 1960. Sbornik rabot Laboratorii neftesinteza, 73-83

TEXT: Oxidation was performed on diisopropylbenzenes obtained by alkylation with hydrogen fluoride. Their composition, determined spectroscopically, was: phthalic acid 15%, isophthalic acid 40-42%, and terephthalic acid 43-45%. The optimum conditions for oxidation at normal pressure and boiling point temperature were found to be a 40-45% excess of HNO_3, a 12-15 hrs reaction time,

Card 1/2

Oxidation of dialkyl derivatives..

a 32-42% concentration of HNO_3. The optimum conditions for oxidation under pressure are a temperature of 140-150°C, a 3.5 -4 hrs reaction time, a terminal pressure of 45-50 atm, a 32-37% concentration of HNO_3. The efficiency was lower at high pressure. Separation of phthalic acids can be achieved either by separation of various dialkylbenzenes prior to oxidation or by separation of the oxidation products. The first method is extremely complex, the second one, based on different solubility of ammonium and calcium salts of isomeric phthalic acids in water, is discussed. There are 4 figures and 5 tables.

Card 2/2

BUTINA, I.V.; PLYUSNIN, V.G.

Separation of phthalic acids by salting out and sublimation. Izv. Sib.otd.AN SSSR no.6:65-71 '60. (MIRA 13:9)

1. Ural'skiy filial AN SSSR.
(Phthalic acid)

BUTINA, I.V.; PLYUSNIN, V.G.; SHEVCHENKO, N.A.

Spectrophotometric determination of isomeric phthalic acids.
Zhur. anal. khim. 18 no.11:1384-1389 N '63. (MIRA 17:1)

1. Institut khimii Ural'skogo filiala AN SSSR, Sverdlovsk.

BUTINA, I.V.; PLYUSNIN, V.G.

Spectrophotometric determination of terephthalic acid in a mixture with its isomers. Zav. lab. 30 no.7:794-796 '64. (MIRA 18:3)

1. Institut khimii Ural'skogo filiala AN SSSR.

BUTINA, I.V.; PLYUSNIN, V.G.

Separation of phthalic acids based on various solubility of their salts in alkaline solutions and in dioxane. Zhur. prikl. khim. 38 no.5:1105-1109 My '65. (MIRA 18:11)

SINYAYEV, A., polkovnik.; BUTIVCHENKO, A., podpolkovnik, kandidat voyennykh nauk.

Bacteriological weapons of the United States Army. Voen.znan. 31 no.9:26-27 S '56. (MLRA 9:11)
(Bacteriological warfare)

S/115/60/000/011/006/013
B019/B058

AUTHOR: Butivchenko, I. G.

TITLE: A Pyrometer Which Automatically Signals the Moment for Reading the Instrument

PERIODICAL: Izmeritel'naya tekhnika, 1960, No. 11, pp. 35 - 36

TEXT: Into an electrothermal pyrometer consisting of a thermocouple and an electronic potentiometer, the author incorporated an automatic device which automatically signals the moment for reading the instrument. This additional device consists of a reversible motor which closes a contact by means of a ratched wheel and lights up a singal lamp. The signal lamp is mounted on the pyrometer casing and facilitates reading. This installation is intended for pyrometers which are briefly immersed in liquid metal during reading. There are 2 figures.

Card 1/1

RAVIKOVICH, I.M.; BRAGIN, Yu.S.; KHUDOROZHKOV, I.P.; MAYZEL', G.M.; STARIKOV, M.A.; GROSHEV, M.Ya.; BUTIVCHENKO, V.N.; Prinimali uchastiye: ANTOSHECHKIN, M.P.; MARKOV, V.N.; CHEKH, N.A.; OBUKHOVA, E.N.; VOZZHAYEV, A.S.

Production of ferrovanadium sinter at the Lebyazh'ye sintering plant. Stal' 25 no.6:484-486 Je '65. (MIRA 18:6)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.

DZERDZEYEVSKIY, B. L., prof.; FORMOZOV, A. N., prof. (Moskva); GALAKHOV, N. N., doktor geograf. nauk (Moskva); FEDOROVICH, B. A., prof. (Moskva); BUTIYEV, V. T.

What the "Calendar of nature" will tell in 1963. Priroda 52 no.1:125-128 '63. (MIRA 16:1)

1. Gosudarstvennyy pedagogicheskiy institut im. V. I. Lenina, Moskva (for Butiyev).

(Natural history)

BUTKEVIC, A.V. [Butkevich, A.V.], prof.

Academician V.V.Popov. Geod kart obzor 8 no.11:219 N '62.

1. NIIGAiK, SSSR.

BUTKEVIC, A.V. [Butkevich, A.V.], doc., kandidat technickych ved

A short barometric formula. Geod kart obzor 8 no.11:203-207 N '62.

1. Novosibirsky geodeticky institut, SSSR.

USSR/Soil Science. Mineral Fertilizers J

Abs Jour : Ref Zhur-Biol., No 13, 1958, 58337, By N.N. Sokolov

Author : Vlasyuk P. A., and Butkevich A. P.
Inst : All-Union Academy of Agricultural Sciences imeni V. I. Lenin
Title : Significance of Soil Microflora in the Manganese Nutrition of Plants

Orig Pub : Dokl. VASKhNIL, 1957, No 5, 3-9

Abstract : The Ukrainian Scientific-Research Institute of Plant Physiology conducted vegetation experiments by growing oats, sugar beet, and flax with and without rhizospheric microflora of these plants in sandy cultures with the following variants: a) without Mn, b) MnO_2, c) $MnSO_4$--1 norm; d).

Card 1/2

BUTKEVICH, A., dotsent (Novosibirsk)

End of a legend. Znan.-sila 38 no.5:52 My '63. (MIRA 16:11)

BUTKEVICH, A. V.

Butkevich, A. V. - "New methods of solving principal geodetic problems on a spheroid", Sbornik nauch.-tekhn. i priozvod. statey po geodezii, kartografii, topografii, aeros"yemke i gravimetrii, Issure 21, 1948, p. 45-57.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 19, 1949).

BUTKEVICH, A.V.

Butkevich, A.V. "On possible simplifications of the solution of the main geodesical problem on a spheroid according to the Gauss method", Trudy Novosib. in-ta inzhenerov geodesii, aerofotos"yemki i kartografii, Vol.II, 1948, p. 61-68

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 9, 1949)

BUTKEVICH, A. V. Cand Tech Sci

Dissertation: "Solution of the Main Geodesic Problem on a Spheroid in the Case of Great Distances."

24/3/50

Moscow Inst of Engineers of Geodesy, Aerial Photography and Soil Science.

SO Vecheryaya Moskva
Sum 71

KHRENOV, L.S. [author]; BUTKEVICH, A.V. [reviewer].

"Seven-place tables of trigonometric functions." Astron.zhur. 30 no.4:457-458 Jl-Ag 53. (MLRA 6:8)

(Trigonometrical functions) (Khrenov, L.S.)

BUTKEVICH, A. V.

"Projection That Preserves Distances Along Meridians and Parallels". Nauch. zap. L'vovsk. politekhn. in-ta, No 18, Ser. geodez., No. 2, pp 79-93, 1954

The author expounds the derivation of a projection (for narrow band) that preserves lengths along meridians and parallels with rectilinear central meridian. The derivation is carried out by the method of successive approximations. The general theory of such projections was developed by Prof B. P. Ostashchenko-Kudryavtsev ("Semiconformal Projections," report to the first All-Union astronomic-geodesis session, 1925). The present author gives the formula for an ellipsoid. He presents data in an investigation of distortions of the projection and form of parallels, and also gives methods of constructing the grids. The projection is employed for survey maps of small scale, especially for representation of countries situated in the middle latitudes, having circular outlines, extended along a meridian. (RZhGeol. No 9, 1955)

SO: Sum No 812, 6 Feb 1956

BUTKEVICH, A.V.

Simplifying calculations for determining the adjustment of a chronometer by V.K.Dellen's method. Astron.zhur. 32 no.5:445-461 S-O '55. (MLRA 9:1)

1.Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii. (Chronometer)

GERASIMENKO, Sergey Petrovich; BUTKEVICH, Adol'f Veniaminovich; SHISHKIN, V.N., red.; INOZEMTSEVA, A.I., red. izd-va; KUZ'MIN, tekhn. red.

[Tables for transferring plane rectangular Gauss coordinates from one zone to another (from a 6° to a 6° zone, from a 3° to a 3° zone, from a 6° to a 3° zone and from a 3° to a 6° zone); Krasovskii's ellipsoid]. Tablitsy dlia perevychisleniia ploskikh priamougol'nykh koordinat Gaussa iz odnoi zony v druguiu (iz 6-gradusnoi zony v 6-gradusnuiu, iz 3-gradusnoi v 3-gradusnuiu, iz 6-gradusnoi v 3-gradusnuiu i iz 3-gradusnoi v 6-gradusnuiu). Ellipsoid F.N. Krasovskogo. Moskva, Izd-vo geodez. lit-ry, 1956. 40 p. (MIRA 11:8)
(Geodesy--Tables)

BUTKEVICH, A.V., kandidat tekhnicheskikh nauk.

Transfer from stereographic coordinates and the reverse. Geod.i kart. no.4:44-46 Je '56. (Map-projection) (MLRA 9:10)

BUTKEVICH, A.V., kandidat tekhnicheskikh nauk.

Solving large traingles in a spheroid by means of addition. Geod. i kart. no.9:20-27 N '56. (MLRA 10:1)
(Triangle)

BUTKEVICH, A. V.

AUTHOR: Butkevich, A. V. 33-4-13/19

TITLE: On the calculation of latitude by Pevtsov's method. (O vychislenii shiroty v sposobe M. V. Pevtsova.)

PERIODICAL: Astronomicheskiy Zhurnal, 1957, Vol. 34, No.4, pp.625-637 (USSR)

ABSTRACT: According to the "Instructions" for 1948 and 1956 (Ref. 1 and 2) Pevtsov's method is recommended for points of 1st - 3rd class at latitudes of up to 65° together with the method of Tal'kott. However, not all the problems connected with Pevtsov's method have been solved. In particular, the necessity for taking into account the effect of diurnal aberration, the error in the chronometer correction, and the field control of latitude calculations has not been fully considered. This is done in the present paper.

Differential equations are derived which can be used to correct the latitude for the variation in the chronometer correction, the difference of the hour angles, and the influence of the diurnal aberration.

Molodenskii's method for calculating the latitude is

Card 1/2

On the calculation of latitude by Pevtsov's method. 33-4-13/19

criticised because it is complicated and does not provide a control. Another method is proposed by which the latitude is first determined for the mean moment, then by additional simple calculations it is found for each wire, a control being provided. The time necessary for calculations by this method is shortened. There are 2 figures, 7 tables and 4 references, all of which are Slavic.

SUBMITTED: August, 10, 1956.

ASSOCIATION: Novosibirsk Institute for the Engineering Geodesy, Aerial Surveys, and Cartography. (Novosibirskiy Institut Inzhenerov Geodezii, Zerofotos"yemki i Kartografii)

AVAILABLE: Library of Congress

Card 2/2

SOV/154-58-3-20/24

AUTHOR: [redacted], Docent, Candidate of Technical Sciences

TITLE: Defending Diploma Theses at the Novosibirsk Engineers' Institute of Surveying, Aerial Photography and Cartography (Zashchita diplomnykh proyektov v NIIGA i K)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"-yemka, 1958, Nr 3, pp 145-146 (USSR)

ABSTRACT: From June 16 to 26, the defending of diploma theses took place at the Novosibirsk Engineers' Institute of Geodesy, Aerial Photography and Cartography. The work of the State Commission for Examinations (GEK) was supervised by A. I. Mazmishvili, Doctor of Technical Sciences, Professor at the Moscow Engineers' Institute of Surveying, Aerial Photography and Cartography (MIIGA i K). His collaborators were: The Chief Engineers at the AGP Novosibirsk: V. V. Polovtsev, and that at the Central Publishing House for Maps at Novosibirsk: A. F. Toropchin. 76 students were admitted to defend their theses (12 of them were astronomers and surveying engineers, 21 geodesists, 20 aerial photographic surveying engineers, and 23 cartographers). 19 students passed with "excellent", 7 obtained

Card 1/2

Defending Diploma Theses at the Novosibirsk Engineers' Institute of Surveying, Aerial Photography and Cartography

diploma with "excellent": V. F. Chernikov, Zh. V. Sirenko, L. I. Kareva, M. A. Tebotov, V. A. Stolyarova, M. A. Fedosenko and L. P. Yakovleva. The theses by V. F. Chernikov "Surveying Work in the Observation of Form Modifications of Technical Constructions" and that by Zh. V. Sirenko: "The Mono-Class Uninterrupted Triangulation Network", as well as that by M. A. Tebotov: "Project of a Complete Atlas of the Novosibirsk Region" caused special attention. The following theses were also pointed out: "Project of a Map of the Peat Deposits in the Southern Part of Zapadnaya Sibir' (Western Siberia)"; L. I. Kareva: "On the Determination of Quantitative Peculiarities of the Relief of Topographical Maps"; M. A. Fedoseyenko: "Method of Determining the Density of the River Network on Topographic Maps"; V. A. Stolyarova: "Project of a Gipsometric Map of the Altayskiy Kray"; A. L. Barger: "Balancing and Evaluation of the Accuracy of Simple Linear Constructions"; S. N. Mikhaylenko: "Process and Method of Modern Time Service"; I. V. Avramenko: "Relief Representation on the Topographical Map of the USSR (1 : 100 000)".

BUTKEVICH, A.V.

6-58-4-18/18

AUTHOR: None Given

TITLE: Chronicle (Khronika)

PERIODICAL: Geodeziya i Kartografiya, 1958, Nr 4, pp. 79-80 (USSR)

ABSTRACT: From February 15, to February 22, 1958 the XII. Scientifical and Technical Conference took place at the Novosibirsk Institute of Engineers of Geodesy, Aerial Photography, and Cartography. The results obtained by the work performed by the Institute in 1957 were made known. The conference was attended by about 200 geodesists and cartographers of 20 scientific- and production-organizations of Novosibirsk, Stalingrad, Kuybyshev, Sverdlovsk, Omsk, Tomsk, Abakan, Krasnoyarsk. Among them were the geodesists occupied with building the hydraulic power plants of Kuybyshev, Novosibirsk and Krasnoyarsk. Lectures delivered at the plenary session: S.A.Kapustin on "Critique of Modern Reformist Theories of State Monopoly Capitalism", R.G.Bannova on "The Penetration of Marxist Ideas into Russia between the Fourties and Seventies of the 19th Century", N.V.Shubin on "Soviet Geodesy and Cartography on the Occasion of the 40th Anniversary of the Great Socialist October Revolution", M.N.Kolobkov on the "Unified Power System of Central

Card 1/3

Chronicle

Siberia and its Importance for the Economic Development of this Region". The following 15 lectures were delivered at the sessions of the department for geodesy: Docent A.I.Agroskin "On the Problem of Angle-Observation in Triangulation" (by which the opinion expressed by Yu.A.Aladzhalov is refuted). Docent V.N.Gan'shin "Efficient Methods of Solving Major Geodetical Problems". Docent A.V.Butkevich "On the Elimination of Successive Approximation in Some Geodetical Calculations". Docent A.A.Vizgin and V.P.Napalkov "The Analysis of the Accuracy of Geodetic Leveling". Chief Engineer I.Ye.Donskikh of the geodetical sector of the Orgenergostroy on "Experience Gathered in Connection with the Determination of Coordinates in the Dam-Tunnel of the Kuybyshev Hydraulic Power Plant". A.A.Meshcheryakov, Candidate of Technical Sciences on "The General Theory of Euler Projection". Chief Geodesist V.P.Utin of the Lengidep Expedition on "Geodetical Work Carried out on the Building Site of the Krasnoyarsk Hydraulic Power Plant". Docent G.I.Znamenshchikov "On the Reducing of the Length of Curved Lines Measured on Maps to the Scale of 1 : 1". (Here it is shown that the method developed by Professor N.M.Volkov has some basic faults). Chief of the Geological Research Expedition of Omsk, Candidate of Technical Sciences D.N.Fialkov on "The Qualitative Characteristic of Vertical Motions of the Earth's

Chronicle

Crust in the Steppe Region on the River Irtysh". Docent V.V.Yegorov "Modern Large-Scale Topographical Maps and Ways and Means of Attaining their Further Improvement". I.I.Markson "The Demands made with Respect to the Representation of Soil Vegetation on Large-Scale Topographical Maps".
Professor K.L. Provorov, director of the MIIGAiK, in closing the conference, gave a summary of the results obtained.

AVAILABLE: Library of Congress

1. Geodetics--Conference 2. Aerial photography--Conference
3. Cartography--Conference

Card 3/3

AUTHOR: Butkevich, A. V., Docent, Candidate of Technical Sciences SOV/154-58-5-4/18

TITLE: On the Determination of Many-Digit Logarithms (O vychislenii mnogoznachnykh logarifmov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, 1958, Nr 5, pp 39-41 (USSR)

ABSTRACT: In this paper the author demonstrates how Taylor's (Teylor) series with a mean argument can be used for the interpolation of the logarithms of numbers and of trigonometric functions in order to avoid recourse to logarithmic tables of 9-10 digits. Thus the tabulated interval can be increased, only one corrective term being required in the interpolation (instead of two or three). Interpolation problems can be solved directly by this new method by finding the mean value of the argument with respect to the mean value of the function (on the basis of the formula presented by the author) or by means of expansion into a series of inverse functions. In a similar manner the author obtains formulae for the computation of the functions of small angles (by way of logarithms). If the series expansions with

Card 1/4

respect to the derivatives of the mean argument (in interpolation) are used, the 9-digit tables of the logarithms of numbers and of trigonometrical numbers can be arranged in the following order: a) Logarithms of numbers 0 - 1000 with intervals of 10 and those of 1000 - 10000 with intervals of 1. b) The quantities $s = \lg \frac{\sin x}{x''}$, $T = \lg \frac{tg\ x}{x''}$, and lg cos x for angles 0 - 5° with intervals of 10". c) The quantities lg sin x, lg tg x and lg cos x of angles of 5 - 45° (85 - 45°) with intervals of 1'. The method of interpolation can also be applied in the compilation and amplification of tables of other analytical functions. By using formula (1) presented by the author and the notation

$$\int f(x+h)\,dx = F(b) \text{ and } \int f(x)\,dx = F(a)$$

a new formula for the numerical integration of analytical functions

$$\int_a^b f(x)dx = F(b) - F(a) = f(x_m)(b-a) + f''(x_m)\frac{(b-a)^3}{24} + \ldots \quad (9)$$

Card 2/4

is obtained, which is very convenient for small intervals. If the Euler - Mac Laurin (Eyler-Makloren) formula is used for numerical interpolation

$$\frac{1}{\omega}\int_{a}^{a+r\omega} f(x)dx = (0.5f_0+f_1+f_2+f_3+\ldots+f_{r-1}+0.5f_r) - \frac{\omega}{12}$$

$$(f_r-f_0')+\frac{\omega^3}{720}(f_3''' - f_0''')- \ldots.$$ the author adds $\frac{1}{2}(f_0+f_1)$

to the left and right part and expresses the integrals by formula (9). Thus the author obtains a new formula for summing up analytical functions:

$$\sum_{a}^{b} f(x) = \frac{1}{\omega}\left[f(x_m)(b-a) + f''(x_m)\frac{(b-a)^3}{24} +\ldots\right] +$$

$$+ \frac{1}{2}\left[f(b)+f(a)\right]+\frac{\omega}{12}\left[f'(b)-f'(a)\right] - \frac{\omega^3}{720}\left[f'''(b)-f'''(a)\right] +\ldots$$

Card 3/4

On the Determination of Many-Digit Logarithms SOV/154-58-5-4/18

ASSOCIATION: Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii
(Novosibirsk Institute of Geodesy, Aerial Surveying and Cartography Engineers)

SUBMITTED: April 17, 1958

Card 4/4

AUTHOR: Butkevich, A. V., Candidate of Technical Sciences SOV/6-58-9-16/26

TITLE: On Calculating With Numbers With Several Places on Ordinary Arithmetic Computers (O mnogoznachnykh vychisleniyakh na obychnom arifmometre)

PERIODICAL: Geodeziya i kartografiya, 1958, Nr 9, pp 7o - 71 (USSR)

ABSTRACT: This is a letter to the editor. Calculators which are insufficiently experienced often encounter difficulties in multiplication and division operations with numbers of 8 and 9 places on the arithmetic computer. Typical errors are shown and the correct methods used in multiplying and dividing such numbers with many places are exposed.

ASSOCIATION: NIIGAiK

Card 1/2

3,4000

83809
S/035/59/000/003/038/039
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1959, No. 3, pp. 103-104, # 2411

AUTHOR: Butkevich, A. V.

TITLE: Solution of the Inverse Geodetic Problem for Distances up to 2,500-2,800 km

PERIODICAL: Tr. Novosib. in-ta inzh. geod., aerofotos''yemki i kartogr., 1958, Vol. 10, pp. 69-77

TEXT: The method of solving the inverse geodetic problem for distances up to 2,500-2,800 km, developed by the author, is described. The method was developed on the basis of Jordan's formulae for the solution of the mentioned problem. Applying Jordan's formulae (Jordan W., Eggert O. Handbuch der Vermessungskunde, 1923, B, III, 86) the inverse geodetic problem is solved in the following order: 1) The known geodetic latitudes B_1 and B_2 are converted to reduced latitudes u_1 and u_2 by the formula: $tg\ u = \sqrt{1-e^2}\ tgB$. 2) The Jordan formula is used to calculate the quantity ω being a function of l ($l = L_2 - L_1$,

Card 1/8

83809
S/035/59/000/003/038/039
A001/A001

Solution of the Inverse Geodetic Problem for Distances up to 2,500-2,800 km

the known difference of geodetic longitudes) and mean latitude $B_m = 1/2\ (B_1+B_2)$. 3) An auxiliary spherical triangle is solved in which the known elements are: two sides, equal to $90^\circ-u_1$ and $90^\circ-u_2$, and the angle between these sides ω; as a result of the solution the third side σ of the triangle and the sought for values of azimuth A_1 and difference of azimuths a are found. 4) The unknown distance s is determined from σ by Jordan's formula. The author proved that the solution of the spherical triangle can be dispensed with, if the formulae for the solution of this triangle are correspondingly transformed by expressing the elements of the spherical triangle through the known elements of the spheroidal triangle. Applying the series "with mean argument"

$$u_m = \frac{f(B_1) + f(B_2)}{2} = f(B_m) + \frac{b^2}{8}\left(\frac{d^2u}{dB^2}\right)_m + \frac{b^4}{384}\left(\frac{d^4u}{dB^4}\right)_m + \ldots,$$

$$\Delta u = f(B_2) - f(B_1) = b\left(\frac{du}{dB}\right)_m + \frac{b^3}{24}\left(\frac{d^3u}{dB^3}\right)_m + \ldots,$$

the author expresses u_m and Δu in the form of functions of B_m and $b = B_2 - B_1$.

Solution of the Inverse Geodetic Problem for Distances up to 2,500-2,800 km

Then, also as functions of B_m and b, are represented the quantities $\sin\frac{\Delta u}{2}$, $\cos\frac{\Delta u}{2}$, $\sin u_m$, $\cos u_m$, which enter the formulae for solving the spherical triangle, and the expression is found for $\operatorname{tg}\frac{\omega}{2}$ as a function of l, B_m and b. Then the author transforms the formulae of spherical trigonometry which were recommended in the mentioned Jordan manual. As a result of these transformations he obtained the following formulae for solving the inverse geodetic problem for distances up to 2,500 - 2,800 km:

$$\lg \operatorname{tg} A_m = \lg \frac{\operatorname{tg}\frac{l}{2}\cos B_m \cdot V_m^2}{\sin\frac{b}{2}} + Fb''^2 + Dl''^2 + k_1 b''^4 + k_2 b''^2 l''^2 + k_3 l''^4;$$

$$\lg \operatorname{tg}\frac{a}{2} = \lg \frac{\operatorname{tg}\frac{l}{2}\sin B_m}{\cos\frac{b}{2}} + Gb''^2 + Dl''^2 + k_4 b''^4 + k_2 b''^2 l''^2 + k_3 l''^4;$$

$$A_1 = A_m - \frac{a}{2}; \qquad A_2 = A_m + \frac{a}{2} \pm 180^\circ;$$

Card 3/8

83809
S/035/59/000/003/038/039
A001/A001

Solution of the Inverse Geodetic Problem for Distances up to 2,500-2,800 km

$$\lg \operatorname{tg} \frac{\sigma}{2} = \lg \frac{\operatorname{tg} \frac{b}{2} \cos \frac{a}{2}}{\cos A_m V_m^2 \sqrt{1-l^2}} + Eb''^2 = \lg \frac{\operatorname{ctg} B_m \sin \frac{a}{2}}{\sin A_m \sqrt{1-l^2}} + Hb''^2 + k_5 b''^4$$

$$\lg s = \lg \frac{2\rho''}{a \cdot V_m} \frac{\sigma''}{2} + Cb''^2 + Bl''^2 \sigma_1 b''^4 + \sigma_2 b''^2 l''^2 + \sigma_3 l''^4,$$

where

$$A = \frac{\mu \eta_m^2}{24\rho''^2} (1 + 3 \operatorname{tg}^2 B_m - \eta_m + \ldots), \qquad B = \frac{\mu \eta_m^2 \sin^2 B_m}{12\rho''^2},$$

$$C = \frac{\mu \eta_m^2}{24\rho''^2 V_m^2} (1 - \operatorname{tg}^2 B_m + 7\eta_m^2 \operatorname{tg}^2 B_m + \ldots)$$

$$D = \frac{\mu \eta_m^2 \cos^2 B_m}{12\rho''^2}; \qquad E = \frac{\mu \eta_m^4 \operatorname{tg}^2 B_m}{4V_m^4 \rho''^2},$$

Solution of the Inverse Geodetic Problem for Distances up to 2,500-2,800 km

$$F = -\frac{\mu\eta_m^2}{6\rho''^2}\left(1 + 1{,}5\ \mathrm{tg}^2 B_m - \eta_m^2 + \ldots\right),$$

$$G = \frac{\mu\eta_m^2}{12\rho''^2 V_m^2}, \qquad H = -\frac{\mu e'^2}{4\rho''^2 V_m^2},$$

$$k_1 = \frac{7\mu e'^2 \cos^2 B_m}{720\rho''^4}, \qquad k_2 = -\frac{\mu\eta_m^2\left(4\sin^2 B_m + 1\right)}{120\rho''^4},$$

$$k_3 = \frac{\mu\eta_m \cos^2 B_m (7 - 12\sin^2 B_m)}{720\rho''^4}, \qquad k_4 = -\frac{\mu e'^2(7\sin^2 B_m + 8)}{720\rho''^4}, \qquad k_5 = \frac{\mu e'^2}{48\rho''^4},$$

Card 5/8

83809
S/035/59/000/003/038/039
A001/A001

Solution of the Inverse Geodetic Problem for Distances up to 2,500-2,800 km

$$\alpha_1 = \frac{\mu e'^2 (2 \sin^2 B - 1)}{480 \rho''^4}, \qquad \alpha_2 = -\frac{\mu e'^2 (12 \sin^4 B + 4 \sin^2 B - 1)}{720 \rho''^4}$$

$$\alpha_3 = -\frac{\mu \eta^2 (14 \sin^4 B - 9 \sin^2 B)}{720 \rho''^4},$$

Applying these formulae, the solution of the auxiliary spherical triangle and the calculation of reduced latitudes u_1, u_2 and the quantity ω are not necessary. From the view-point of calculation work consumption, the main terms of the formulae tg A_m, tg $\frac{a}{2}$, tg $\frac{b}{2}$ are equivalent to the formulae of spherical trigonometry. To facilitate the calculation of correction terms in the formulae the author composed the tables of logarithm values of quantities A, B, C, D, E, F, G, H, k_1, k_2, k_3, k_4, δ_1, δ_2, δ_3 and λ_1, λ_2, λ_3 entering the complete Jordan formulae, for the Krasovskiy ellipsoid.

A. M. Virovets

Card 6/8

83809
S/035/59/000/003/038/039
A001/A001

Solution of the Inverse Geodetic Problem for Distances up to 2,500-2,800 km

(In the Reinsford article "Geodetic Lines of Great Extension on Ellipsoid" (Bull. geod. 1955, No. 37; RZhAstr, 1956, No. 11, # 6544) Sodano's formula for calculating the difference between reduced and geodetic longitudes is presented in the form

$$\lambda - L = fz\,\theta - \frac{1}{4} f^2 z\ \theta\,(1 - 5z^2) -$$

$$- 2P\,(2\theta^2 - \sin^2\theta) + (1 - z^2)\sin\theta\cos\theta + \ldots$$

Actually it should look as follows:

$$\lambda - L = fz\,\theta - \frac{1}{4} f^2 z\ \theta\,(1 - 5z^2) -$$

$$- 2P\,(2\theta^2 + \sin^2\theta) + (1 - z^2)\sin\theta\cos\theta + \ldots,$$

where

$$P = \frac{\cos\theta\,(1 - z^2) - x}{\sin\theta}.$$

Card 7/8

83809
S/035/59/000/003/038/039
A001/A001

Solution of the Inverse Geodetic Problem for Distances up to 2,500-2,800 km

The attention of the Editorial Board to the inaccuracy committed by Reinsford was drawn by A. V. Butkevich, Editorial Bord).

Translator's note: This is the full translation of the original Russian abstract.

UX

3(4)

AUTHOR: Butkevich, A. V., Candidate of Technical Sciences SOV/6-59-1-4/14

TITLE: On the Balancing of Linear Intersections (Ob uravnivanii lineynykh zasechek)

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 1, pp 21-31 (USSR)

ABSTRACT: The following problems were investigated: the favorable position of the point determined by the linear intersection, the removal of systematic measuring errors, and the selection of the method of balancing linear intersections. Based on the investigation carried out the following is stated:
1.-The principle of the total arithmetic mean can be used for the balancing of linear intersections. In this case, however, the squares of the sines of the angles of the basic triangle (as incorrectly maintained by V. A. Polevoy) will be the weights of the coordinates but the squares of the sines of the angles between the sides measured in intersecting.
2.-The most favorable position of the point determined by three intervals will be found in the following cases: if the point is located within the basic triangle the angles of the intersection must be equal to 120°; if the point is outside

Card 1/2

the basic triangle they must be 60 and 120 (240°). 3.-The calculation of the coordinates, their balancing and the estimation of the accuracy can be connected with each other if the existing formulas of the method of indirect measurements are used in the calculation of the linear intersections.
4.-It is useful to calculate the approximate coordinates of the point according to the formulas by S. A. Butler, by controlling the intervals.
5.-It is not difficult to derive analogous formulas for the calculation of the coordinates of points at the surface of the ellipsoid. A diagram given was plotted by V. A. Kuz'michuk, Diploma Candidate at the NIIGAiK. There are 5 figures, 2 tables, and 5 references, 4 of which are Soviet.

5.4000 69625

AUTHOR: Butkevich, A. V., Docent, Candidate of Technical Sciences

S/154/60/000/01/010/017
B007/B123

TITLE: Modern Geodetic Aids and Methods for Connecting Continents

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, 1960, Nr 1, pp 89-101 (USSR)

TEXT: A survey is given here of the various geodetic methods for connecting continents. 1) Triangulation method. The largest triangulation side in the USSR is the one from the El'brus to Godorezi (234 km). With the aid of this method the nets of the USSR can be combined with those of the USA across the Bering Strait and the islands of Diomid and King (project L. Bolbas, woman graduate student of the MIIGA i K (Moscow Institute of Geodetic, Aerial Survey, and Cartographic Engineers)). In the same way the northern islands can be connected with the continent. However, the possibilities of this method are restricted by distances of 250-300 km and bad sight. 2) Method of dynamic triangulation (flare triangulation). It is based upon observations of mobile objects and the build-up of "geodetic hexagons" (Fig. 2). A further development of this method is based on the use of interference theodolites of the type suggested by E. Gigas (Ref 4) in 1954. The method is superior to ordinary triangulation, it is however, very complicated concerning organization, and restricted by distances of 350 km.

Card 1/3

~~66025~~ 69625

S/154/60/000/01/010/017
B007/B123

Modern Geodetic Aids and Methods for Connecting Continents

The range of application of this method can be extended by a significant increase in the accuracy of radio ranging and by the use of artificial earth satellites. An interference instrument was first worked out by Academician V. P. Linnik in 1946, these instruments are, however, used in the USSR in astronomy only. 3) Radar method. For this method a pulse-type electronic ranging system and the "method of cross-flights" are used. Pulse methods were first applied for determining the altitude of the ionosphere in the USA in 1925 and in the Soviet Arctic region in 1932-1933 (M. A. Bonch-Bruyevich). In 1945 the USA applied the Shoran method in Italy, and analogous systems were worked out in the USSR (Refs 6, 7). With the aid of this method extensive radiogeodetic nets were built up in the USA, Canada, Australia, and the USSR. For this kind of connection the author developed methods of solving triangles with large measured sides of up to 800 km (Ref 7). For the connection of island chains, e.g., the Aleutian Islands, "radio traversing" or "azimuth intersection" can be used. These methods are a generalization of intersections of an ellipsoid by A. I. Durnev. 4) Method of cosmic triangulation. As compared to flare triangulation, the celestial bodies nearest to the earth - the moon and artificial satellites - and not the rockets, are observed here. Four methods of cosmic triangulation are distinguished. The first method was suggested by T. Banachevich (Poland) in 1929. H. Sandig and

Card 2/3

~~60025~~ 69625

Modern Geodetic Aids and Methods for Connecting Continents

S/154/60/000/01/010/017
B007/B123

K. Notar (Eastern Germany) developed a photometer for eclipses in 1954 (Ref 13). The second method was devised by G. Batterman (Germany, Ref 16). The third method comprises photographic observations of the moon and stars. It is difficult to photograph the moon and stars simultaneously. To overcome this difficulty two methods were suggested in 1954: one by W. Markowitz (USA) (Ref 12) and the other by A. A. Mikhaylov (Pulkovo) (Ref 14). In Pulkovo both methods were investigated. According to the opinion of A. A. Mikhaylov lunar observations are very tedious (Ref 14). It is better to observe the artificial satellite and the stars separately since the parallax of the earth satellite is far larger than that of the moon. The motions of artificial earth satellites are complicated, the parameters of their orbits change; therefore, these satellites can be used as high mobile objects. The fourth method is therefore the most favorable and most precise one for connecting continents geodetically. Ye. Bukhar (Czechoslovakia), F. N. Krasovskiy, and V. V. Popov are mentioned. There are 7 figures and 18 references, 11 of which are Soviet.

ASSOCIATION: Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii (Novosibirsk Institute of Geodetic, Aerial Survey, and Cartographic Engineers)

Card 3/3

BUTKEVICH, A.V., dotsent, kand.tekhn.nauk; MITNIKOV, M.A., assistent

Defense of diploma projects at the Novosibirsk Institute of Geodetic, Aerial Survey and Cartographic Engineers. Izv. vys. ucheb. zav.; geod. i aerof. no.5:151-152 '60. (MIRA 13:12)

1. Kafedra geodezii Novosibirskogo instituta inzhenerov geodezii, aerofotos"yemki i kartografii (for Mitnikov).
(Novosibirsk--Surveying--Study and teaching)

BUTKEVICH, A.V., kand.tekhn.nauk

Plotting of tables. Geod.i kart. no.6:51-52 Je '60.
(MIRA 13:7)

(Geodesy—Tables, etc.)

BUTKEVICH, A.V., kand.tekhn.nauk

Computing coefficients and free terms of conditional equations in linear networks. Geod. i kart. no. 11:13-16 N '60. (MIRA 13:12)

(Surveying)

S/035/61/000/006/041/044
A001/A101

3.4000

AUTHOR: Butkevich, A.V.

TITLE: On conformal mapping of the ellipsoid on the sphere

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 6, 1961, 28, abstract 60238 ("Tr. Novosib. in-ta inzh. geod., aerofotos"yemki i kartogr.", 1960, v. 13, 17 - 34)

TEXT: Various variants of conformal mapping of the ellipsoid on the sphere are compared. An attempt is made of approximate geometrical interpretation of Mallweide conformal projection and I Gauss projection. Both projections are interpreted, with errors in terms containing e^4, e^6..., as particular cases of ellipsoid mapping onto a concentric sphere, whose radius is equal to the major semiaxis of the ellipsoid, from the points located on the minor ellipsoid axis. As a consequence, the identity of the methods of Bagratuni (1949) and Berrot (1922) is pointed out. It is noted that Bagratuni's formulae for the latitude of the points of the perspective of a normal cross section and for the azimuth of this cross section are to be considered rather as formulae of F.A. Sludskiy (the first of them existed already in Hansen's works. Reviewer). Various methods of solving geode-

Card 1/2

S/035/61/000/006/040/044
A001/A101

3,4000

AUTHOR: Butkevich, A.V.

TITLE: Solution of the inverse geodetic problem for considerable distances

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 6, 1961, 27, abstract 60234 ("Tr. Novosib. in-ta inzh. geod. aerofotos"yemki i kartogr.", 1960, v. 13, 39 - 47)

TEXT: The author presents arguments to prove the necessity of solution of the inverse geodetic problem for considerable distances. The known solution methods are analyzed. It is stressed that A.A. Vizgin's proposal (RZhAstr, 1954, no. 11, 5886) brings to the aim faster than the approximation procedure recommended by G.V. Bagratuni for the method of A.M. Virovets (Tr. TsNIIGAiK, 1952, no. 93). Drawbacks of Sodano's method (RZhAstr, 1956, no. 11, 6544; 1959, no. 3, 2411) are pointed out. Two differential methods are proposed in which the values of arc length σ_o and angle ω_o of the Bessel presentation of a geodetic line are calculated at once with complete number of digits, and then they are mutually corrected

B

Card 1/2

S/035/61/000/006/040/044
A001/A101

Solution of the inverse geodetic problem ...

by differential corrections. Solutions of the same example ($s \approx 14{,}000$ km) by both methods are presented. The arc length agreed up to 0.1 m, and in azimuths there was a divergence of 0".002. There are 10 references.

V. Gan'shin

[Abstracter's note: Complete translation]

Card 2/2

3.1410

78025
SOV/33-37-1-25/31

AUTHOR: Butkevich, A. V.

TITLE: The Application of Geodetic Principles in Practical Astronomy

PERIODICAL: Astronomicheskiy zhurnal, 1960, Vol 37, Nr 1, pp 161-172

ABSTRACT: The first problem considered by the author is the computation of azimuth and latitude by means of observations of Polaris. He shows that when a theorem of Legendre is used the work is much simplified, since in the parallactic triangle of Polaris the hypotenuse does not exceed 56', and only second order terms of the spherical excess ϵ are required. Detailed led formulas for practical use of this principle are developed, and a sample of computations is presented. The second problem is the computation of the correction of a chronometer and of estimating its error. Here, the principle of the general arithmetical mean is used, both for interpolation and extrapolation of the clock corrections. The original empirical formulas were

Card 1/3

derived in 1844 by Wilhelm Struve; in 1936 N. Kh. Preypich objected to Struve's formulas and derived more exact expressions for the formulas of Gauss. However, the author shows that the formulas of Gauss may be derived in a much simplified way. But, as has been shown by N. N. Pavlov, Whenever the original Struve formulas form the base of the computation, care should be taken to see which type of chronometer or clock will give the best results. The last problem considered is the computation of the value of the pitch of the eye-peice micrometer R' and of estimating its error by means of equations of directions and angles. The usual methods are complicated and time-consuming, and the methods of estimating the error of R' are not developed even when most exact procedures are used. Al these difficulties disappear if one uses a general theory of intermediate measurements; it corresponds closely to the method of adjusted directions in geodesy. There are 3 figures; 6 tables; and 12 references, 11 Soviet, 1 U.K. The U.K. reference is:

The Application of Geodetic Principles in Practical Astronomy

78025
SOV/33-37-1-25/31

D. H. Sadler, Empire Survey Review, VII, Nr 47, Jan. 1943.

ASSOCIATION: Novosibirsk Institute of Engineering Geodesy, Aerophotography, and Cartography (Novosibirskiy institut inzhenerov geodesii, aerofotos'emki i kartografii)

SUBMITTED: July 16, 1958; after correcting, July 15, 1959

Card 3/3

BUTKEVICH, A.V., dotsent, kand.tekhn.nauk

Adjustment of rectangles with measured sides. Izv.vys.ucheb.zav.; geod.i aerof. no.1:3-19 '61. (MIRA 14:6)

1. Novosibirskiy institut geodezii, aerofotos"yemki i kartografii. (Surveying)

BUTKEVICH, A.V.

Incomprehensible "rationalization." Geod.i kart. no.8:74-75 Ag '61. (MIRA 14:10)
(Mathematics--Tables, etc.)

S/270/63/000/001/016/024
A001/A101

AUTHOR: Butkevich, A. V.

TITLE: A simplified solution of geodetic problems (at S $\leq$ 700 - 800 km)

PERIODICAL: Referativnyy zhurnal, Geodeziya, no. 1, 1963, 35, abstract 1.52.232 ("Tr. Novosib. in-ta inzh. geod., aerofotos"yemki i kartogr.", 1961, v. 15, 49 - 55)

TEXT: The author holds that the present accuracy of measurements (no more than 1:100,000) at distances up to 800 km makes it possible to employ a simplified solution of geodetic problems (with accuracy of 0.8 - 1.0 m) with the aid of 7-digit tables. The advantage of using for this purpose Gauss's second projection (at $R = \sqrt{M_o N_o}$) in comparison with his first conformal projection ($R = N_1$) is emphasized. Approximate formulae for solution of direct and inverse problems, examples and auxiliary tables are presented. There are 6 references.

V. Gan'shin

[Abstracter's note: Complete translation]

Card 1/1

ZELIKSON, M.S.; BUTKEVICH, A.V.

Proposals for calendar reform. Ast[illegible] .Sbir. [illegible] 1:18-19 Ap '61. (MIRA 14:11)

1. Odesskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva i Novosibirskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva.
(Calendar reform)

BUTKEVICH, A.V.

First Plenum of the Interdepartmental Geophysical Committee.
Geomag. i aer. 1 no.3:450-451 My-Je '61. (MIRA 14:9)
(Geophysics—International cooperation)

S/033/61/038/005/013/015
E031/E135

3,2200

AUTHOR: Butkevich, A.V.

TITLE: The application of Taylor series with mean argument to interpolation, numerical integration and the summation of certain series

PERIODICAL: Astronomicheskiy zhurnal, v.38, no.5, 1961, 989-993

TEXT: Writing $x_o + h/2 = x_m$, we have that

$f(x_o + h) - f(x_o) = f(x_m + h/2) - f(x_m - h/2)$.

By expanding the latter functions in Taylor series a rapidly converging series is obtained which can be applied to the problems of interpolation, inverse interpolation, integration and the summation of certain series.

Acknowledgments are expressed to Corresponding Member of AS USSR M.F. Subbotin for checking the manuscript and for advice.

There are 8 references: 7 Soviet-bloc and 1 English. The English language reference reads as follows:

Ref.8: R. Hirvonen, Nutschell. Tables of Mathematical Functions for Interpolation with Calculating Machines.

Card 1/2

The application of Taylor series S/033/61/038/005/013/015
E031/E135

Ref.8 continued.
Bull. Géodés., N 30, December 1953, Paris.

SUBMITTED: November 10, 1960

Card 2/2

BUTKEVICH, A.V., prof.

"Tracking the Tunguska catastrophy" by N.Vasil'ev and others. Reviewed by A.V.Butkevich. Priroda 50 no.12:121 D '61. (MIRA 14:12)

1. Geodezicheskiy institut, Novosibirsk.
(Podkamennaya Tunguska Valley--Meteorites) (Demin, D.) (Erokhovets, A.) (Zhuravlev, V.) (Zhuravleva, R.) (Kandyba, IU.) (Kolobkova, G.) (Krasnov, V.) (Kuvshinnikov, V.) (Matushevskii, V.) (Plekhanov, G.) (Shikalov, L.) (Vasil'ev, N.)

S/154/62/000/005/001/002
D036/D114

AUTHOR: Butkevich, A.V., Docent, Candidate of Technical Sciences

TITLE: On computing the geocentric radius and latitude

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, no. 5, 1962, 3-12

TEXT: Simplified and generalized formulae are proposed for computing the geocentric latitude ψ and radius ρ for a point not lying on the surface of the ellipsoid. The formula for ρ is sufficiently accurate for calculations up to the eighth decimal place, while the formula for ψ is accurate to 0".0001 when the constants k and lg k are known to the seventh place. The formulae are also generalized for a point lying at an altitude H above the ellipsoid. There are 2 figures and 4 tables.

Card 1/2

S/154/62/000/005/001/002
D036/D114

On computing the geocentric radius ...

ASSOCIATION: Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii (Novosibirsk Institute of Engineers of Geodesy, Aerial Photography and Cartography)

SUBMITTED: June 11, 1960

Card 2/2

BUTKEVICH, A.V.; ANGELOV, S.A.; GAN'SHIN, V.N.

Authorship of tables. Geod.i kart. no.10:66-68 O '62.
(MIRA 15:12)
(Surveying--Tables, Etc.)

BUTKEVICH, A.V.; MITNIKOV, M.A.

Conference of topographers of the Siberian geological Survey. Razved. i okh. nedr 28 no.2:62-63 F '62. (MIRA 15:3)

1. Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii.

(Topographical surveying--Congresses)

BUTKEVICH, A.V., kand.tekhn.nauk; SHAYEVICH, Ya., inzh.

Stargazer (on the occasion of IU.V.Kondratiuk's 60th birthday).
Av.i kosm. 45 no.8:30-31 '62. (MIRA 15:8)
(Kondratiuk, IUrii Vasil'evich, 1900-)

BUTKEVICH, A.V.

Change-over from spatial rectangular coordinates to geodesic coordinates. Geod. i kart. no.10:12-17 O '63. (MIRA 16:12)

L 17624-65 FSF(h)/FSS-2/EWT(1)/EWG(v)/FS(v)-3 Po-4/Pe-5/Po-4/Pg-4/Pae-2/P1-4/ ASD(a)-5/SSD(a)/SSD/AFMDC/AFMD(t)/AFTC(a)/AFETR/RAEM(1)/ESD(gs)/ESD(t)/ES-4 TT/WW

ACCESSION NR: AR4045036 S/0313/64/000/[illegible]/[illegible]

SOURCE: Ref. zh. Issledovaniye kosmicheskogo prostranstva. Abs. 5.62.164

AUTHOR: Butkevich, A.V.

TITLE: The use of artificial earth satellite observations in higher geodesy

CITED SOURCE: Tr. Novosib. in-ta inzh. geod., aerofotos"yemki i kartogr., v. 17, no 1 1963, 129-141

TOPIC TAGS: geodetics, artificial earth satellite, cartography, satellite orbit

TRANSLATION: The gravimetric and geodetic problems which can be solved through the use of satellite observations are described. The basic equation for the movement of the satellite has the form $\ddot{r} = r'$ where r and r' are respectively the geocentric instances of the satellite and f is its radius-vector. In the absence of the geocentric coordinates for the satellite, due to unreliable time determination, it becomes necessary to employ a movable coordinate system (radius-vector, tangent, binormal). If the orbital elements are known (as in the case of a so-called passive satellite), then it is possible to determine only the differences of the geocentric coordinates of the

Card 1/2

L 17624-65
ACCESSION NR: AR4045036

observation points (P_1, P_2) and, by them, the length of the chord P_1P_2 and its orientation with respect to the planes of the equator and the Greenwich meridian. A method is outlined whereby satellite observations may be used for a transition to a system of coordinates with respect to the mass center of the Earth. This method also permits the reduction of the coordinates to a single system and the establishment of a common terrestrial ellipsoid. K. Antonovich.

SUB CODE: ES , SV ENCL: 00

Card 2/2

L 61813-65 EWT(1)/EWA(d)/T/EED-2/EED(b)-3 GM

AM5011714 BOOK EXPLOITATION UR/ 528.236.2

29
0H

Butkevich, Adol'f Veniaminovich

Research on the solution of computer problems in spheroidal geodesy (Issledovaniya po resheniyu vychislitel'nykh zadach sferoidicheskoy geodezii). Moscow, Nedra, 1964. [illegible] p. illus., biblio. 1,200 copies printed.

TOPIC TAGS: geodetic survey, geodesy, coordinate system, [illegible] calculation

PURPOSE AND COVERAGE: The book presents methods for solving [illegible] spheroid geodesy and certain specialized problems which have arisen with application of new methods of geodesic measurement and the [illegible] on large territories. The book presents methods for selecting projections and coordinate systems, methods for the exact and approximate solution of direct and indirect problems involving medium range (200-800 km.) or long distances (up to 20,000 km.), and methods for solving problems related to [illegible] surements and earth satellite observations. Some of the [illegible] worked out on models but with an explanation of how they can be [illegible]

Card 1/3

L 61813-65
AM5011714

applied. The purpose of the book is to provide an analysis of computer methods and the mathematical principles underlying certain technical [illegible] desy.

TABLE OF CONTENTS:

Card 2/3

L 61813-65
AM5011714

SUB CODE: ES, DP SUBMITTED: 25Jul64 NO REF SOV: 155

OTHER: 057

Card 3/3

BUTKEVICH, A.V.

Sergei IAkovlevich Belykh 1901-1963; obituary. Biul. VAGO no.35: 53-54 '64. (MIRA 18:4)

L 20115-65 EWT(1)/EWG(v) Pe-5/Po-4/Pq-4/Pac-4/Pae-2 GW

ACCESSION NR: AP5001236 S/0033/64/041/006/1138/1146

AUTHOR: Butkevich, A. V.

TITLE: A simplification of the method for determining and computing latitudes in Arctic regions and epherides of star pairs for latitude determination

SOURCE: Astronomicheskiy zhurnal, v. 41, no. 6, 1964, 1138-1146

TOPIC TAGS: geodetic astronomy, latitude determination, Arctic latitude determination

ABSTRACT: The shortcomings and difficulties encountered in applying known methods of latitude determination (Pevtsov, Talcott, and measurement of zenithal distances of stars near the meridian) in Arctic regions are discussed. It is shown that at high latitudes the most convenient method, in organizational and technical respects, is the "combined Talcott method" including a procedure for measuring zenithal distances with one position of the vertical circle, proposed by R.R. Vul'f in 1928. This method was simplified by the author, who reduced the amount of time required for processing

Card 1/3

L 20115-65

ACCESSION NR: AP5001236

observations. In 1951, he investigated the "combined method" at Novosibirsk and applied it successfully at Class 1 points at latitudes of 70—71 deg. The author compiled an ephemeris (1958) containing 470 star pairs for latitudes ranging from 62.5 to 83.5 deg. A revised ephemeris (1965.0) containing 402 star pairs (Class I) and 145 star pairs (Class III) for observations in a zone from 64 to 81 deg are described. The stars are of magnitude $m \leq 4.5$ and can be observed at upper culmination, upper and lower culmination, or together with the Pole Star (α U Mi). A similar epheris with 171 star pairs was compiled in 1964 for the Antarctic region by G. Kh. Dzhandyrov. Orig. art. has: 36 numbered equations and 8 tables.

ASSOCIATION: Institute inzhenerov geodezii, aerofotos"yemki i kartografii, Novosibirsk (Institute of Engineers in Geodesy, Aerial Photography, and Cartography)

Card 2/3

L 20115-65

ACCESSION NR: AP5001236

SUBMITTED: 21Feb63 ENCL: 00 SUB CODE: ES, AA

NO REF SOV: 010 OTHER: 000

Card 3/3

L 03961-67 EWT(1) GW
ACC NR: AP6017067 (N) SOURCE CODE: UR/0154/65/000/005/0059/0064

AUTHOR: Butkevich, A. V. (Docent); Kryzhanovskiy, A. A. (Engineer)

ORG: Novosibirsk Institute of Engineers of Geodesy, Aerial Photography and Cartography (Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii)

TITLE: Estimating azimuths on the basis of observations of stars vertical to the North Star (by the A. A. Luker'in method)

SOURCE: IVUZ. Geodeziya i aerofotos"yemka, no. 5, 1965, 59-64

TOPIC TAGS: coordinate, astronomic geodesics, aerial photograph, geodetic survey

ABSTRACT: The Luker'in method of determining azimuths, because of its simplicity, is recommended for surveying, railroad, photogrammetry, and artillery purposes. The method of calculating the azimuth using the North Star and auxiliary stars is described, including the calculations for the collimation error and the degree of deviation of coordinates. Some examples of the use of the method are given. Recommended by the Chair of Higher Geodesy, NIIGAiK. Orig. art. has: 4 tables, 1 figure.

SUB CODE: 08,14/ SUBM DATE: 16Dec64/ ORIG REF: 007

UDC: 528. 28. 3

Card 1/1